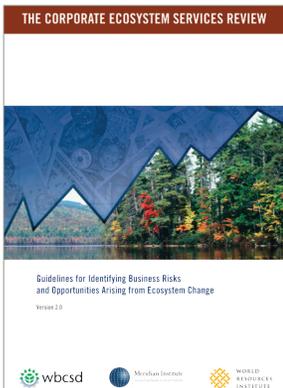




# THE CORPORATE ECOSYSTEM SERVICES REVIEW CASE STUDY: VOTORANTIM INDUSTRIAL

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*The Corporate Ecosystem Services Review (ESR) is a proven 5-step method to help managers identify business risks and opportunities arising from their dependence and impacts on ecosystem services. This case study describes one company's experience and results in applying the ESR.*

This case is an accompaniment to The Corporate Ecosystem Services Review Version 2.0 (2012), which is available online at [www.wri.org/ecosystems/esr](http://www.wri.org/ecosystems/esr). It was produced in association with CEBDS, GVces, and USAID.

## WHY VOTORANTIM IS USING THE ESR

**Votorantim Industrial**, a large Brazilian holding company for mining, steel, cement, hydropower energy, orange juice, and pulp, has prioritized biodiversity and ecosystem services as one of nine key sustainability issues for the company since 2009. Since the company owns natural lands that potentially provide benefits to the company and to society, assessment of ecosystem services is of strategic interest to the corporate sustainability team.

Votorantim first applied the **Corporate Ecosystem Services Review (ESR)** in 2012 as part of a Brazilian business sustainability initiative called **Parceria Empresarial pelos Serviços Ecosistêmicos (PESE)**, a partnership among companies and civil society to demonstrate the business benefits of ecosystem services in Brazil. The eight companies participating in PESE applied the ESR and met periodically to share their experiences.

## STEP 1. SELECT THE SCOPE

*To keep the ESR process focused and manageable, the first step is to select a scope of assessment that is strategic, timely, and internally supported by the company.*

Votorantim focused its ESR assessment on a “greenfield” integrated bauxite mining and alumina refinery in Rondon do Pará, in the eastern part of the Amazon, operated by Votorantim Metals. It has an estimated investment of US\$2.8 billion, will create 6,000 jobs (approximately 12 percent of the municipal population), and initially will produce 3 million metric tons of alumina per year. The sustainability team at Votorantim aims to make this operation a model of sustainability and safety for the mining sector. It is setting targets on water consumption, waste disposal, safety, certification and capacity building for local suppliers and workers.

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Since the various phases of a mine lifecycle from construction to rehabilitation have different impacts on ecosystem services, the team opted to narrow the focus of the ESR to a single phase. They focused on the construction phase of the operation, which is scheduled through 2016. Votorantim is the first known company in the world to apply the ESR to the construction phase of a mining operation. Its ESR examined the procurement of building materials and site-specific activities for building the site, including terraces, the transport area, and housing for employees.

## STEP 2. IDENTIFY PRIORITY ECOSYSTEM SERVICES

*To focus on the ecosystem services most relevant to business performance, the second step of the ESR is to prioritize a few key ecosystem services by evaluating the degree of the company's dependence and/or impact on more than 20 ecosystem services.*

After choosing the scope of the ESR (Step 1), the sustainability team applied **ESR dependence and impact assessment tool** (Step 2). They shared the preliminary results with the local site management team and incorporated new information into the analysis. The ESR team prioritized four ecosystem services:

*Sand* is a fundamental input to constructing the structures; it is used for foundations, for paving the industrial buildings and offices. Sand will probably be extracted from the Ararandeuá River, which also provides water to Rondon do Pará. Votorantim's environmental policy requires all sand extraction to be licensed and authorized by a governmental environmental agency.

Great quantities of *wood* are also necessary to build the structures. The prerogative expressed by the company in its environmental policy is to buy only wood certified as sustainable, but in the Amazon region, suppliers of certified-sustainable and verifiably legal wood are rare. Securing a sustainable and legal source of wood at low cost is a necessity for the company.

The company uses *freshwater* during the construction of the operation for building the site, therefore the water uptake will likely occur through from wells. The company is currently assessing the quantity and quality of water needed in this phase. Water reuse and rain water collection systems could supply some water and reduce environmental impacts.

*Water purification and waste treatment.* Implementation of the project will generate large quantities of solid waste, like industrial materials, and domestic. The company aspires to ensure responsible disposal of this waste. Rondon do Pará does not have a licensed sanitary landfill or a sewage treatment plant, a challenge to be overcome by the company.

## STEP 3. ANALYZE TRENDS IN PRIORITY ECOSYSTEM SERVICES

*Step 3 of the ESR guides an analysis of the conditions and trends in the ecosystem services prioritized in the previous step, as well as drivers of environmental change that significantly influence those trends.*

### Votorantim's Role in Local Development and Environmental Uplift

The activities of the government and local raw material suppliers have a major impact on ecosystem services on which Votorantim Metals relies for its operating conditions. The ESR highlighted the challenge of how to advance Votorantim's sustainability goals in a region that does not always subscribe to the same principles. Like much of the eastern part of the Amazon, Rondon do Pará developed its economy largely through logging, cattle ranching, and natural resource extraction. Thus, the ESR team found that many ecosystem services are already depleted because of past and present exploitation (Imazon 2013) and that the city lacks a local environmental agency.

## The Challenge of Finding Information on Ecosystem Services

The company encountered a paucity of studies on the ecological implications of natural resources extraction in the region, as well on the condition and trends of ecosystem services. Therefore, there are insufficient studies on which to base assessments on the impact of sand extraction on the river. Without access to this information the probability of actual impacts be distinguished from potential impacts increases. The envisaged impact control measures may require future adjustments to remain effective.

## Challenges with Certified-Sustainable Products

Votorantim's ESR team identified that there was a scarcity of certified-sustainable sand and timber in the region. Preliminary investigations indicated that almost all sand sold in Rondon do Pará currently comes from illegal extraction. This is in part due to limitations of the environmental agency to license and monitor sand suppliers.

Although approximately 4,000 square kilometers of natural forest has been cleared in the area, the area of replanted commercial forests is increasing (Imazon 2013). Votorantim Metals will demand processed timber from these commercial forests, as soon as its legality can be attested. This practice might stimulate local producers to seek certification or, conversely, to forge the required documentation.

## STEP 4. IDENTIFY BUSINESS RISKS AND OPPORTUNITIES

*Step 4 of the ESR evaluates how trends in ecosystem services can impact the company, either positively or negatively.*

### Operational Risks: Scarcity of Inputs

The company requires more certified-sustainable and legal wood and sand than is currently available in the region. This new demand could increase price and logistics costs associated with finding and shipping these products. Likewise, the amount of available water needs to be understood to keep costs low and minimize environmental impacts. So far, studies on this topic are not available.

### Regulatory and Reputational Risks Regarding Wood and Sand

According to Monteiro et al. (2012), 60 percent of the logged area in Pará state between 2010 and 2011 was unauthorized. A large amount of local wood was sold with forged documentation (Greenpeace 2005). Because Votorantim will buy wood from the region, it risks being associated with illegal deforestation, even if it buys allegedly certified wood. This situation could create reputational and legal risks for the company.

Similarly, if sand extraction, which will have a significant portion destined to supply the company, alters the river where communities gather for bathing or swimming. The overlapping use of the resource can impact the related ecosystem service in a broad manner. Unfortunately, there is a lack of information to determine the likelihood of this risk, as there are no researches developed in the area.

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## Regulatory and Legal Opportunities

According to Votorantim’s sustainability requirements, the operation needs access to a licensed landfill, as well as to certified-sustainable and legally produced raw materials. Yet these items are not currently available in the region. Therefore, a key to realizing Votorantim’s sustainability goals will be working with the government to ensure protection and sustainable management of ecosystem services in the region.

Votorantim Metals is in a position to encourage and support the city to invest in creating these amenities, which will also benefit the community. The company can constructively pressure regional public services to be more efficient and effective, for example, by demanding the construction of an adequate landfill and other infrastructure, and by helping local wood and sand suppliers become licensed according to Brazilian legislation.

## Reputational Opportunity

Although Votorantim is faced with a number of challenges in making this project a model of sustainability for the mining industry, success will reflect well on Votorantim. To meet its sustainability objectives regarding biodiversity and ecosystem services, the company must not only improve its own actions, but also improve those of the municipal government and its supply chains. The positive impact of enabling and accelerating environmental and social improvements will benefit Votorantim’s reputation.

## Financing Opportunities: Proactively Addressing New Lending Requirements

Although Votorantim’s current lenders have no specific requirements concerning ecosystem services, the International Finance Corporation (IFC) as well as signatories to the Equator Principles— which represent more than 70 percent of global private equity lending — have adopted stringent requirements for their clients to conduct ecosystem service reviews and mitigate impacts to ecosystem services (IFC 2011). Also, 41 financial institutions have signed The Natural Capital Declaration, which commits them to integrating ecosystem service considerations into lending requirements (NCD 2012). Votorantim’s prioritization of ecosystem services and experience using the ESR across multiple divisions prepares the company to meet these lending requirements, building eligibility for investment and anticipating the development of similar standards at other lending institutions.

## STEP 5. DEVELOP STRATEGIES

*Step 5 of the ESR focuses on creating new business strategies that address the risks and opportunities identified in the previous step. Actions can be grouped under three categories: internal changes, external engagement with stakeholders or sectoral players, and public policy engagement.*

Votorantim’s ESR integrated the knowledge of the corporate team with the site team to find ways of making strategic and corporate sustainability goals tangible for operations. Some strategies to advance corporate sustainability goals in Rondon do Pará are under consideration by Votorantim’s corporate sustainability team and include:

- *Evaluate the possibility of using the ESR as a complementary tool to traditional impact assessments.* Assessing dependence and impacts on ecosystem services, identifying other users of the same ecosystem services, and collecting regional data on conditions and trends of ecosystems could offer complementary information to support impact assessment and corporate planning processes.
- *Operationalize Votorantim’s procurement policy and overcome the legal and sustainability challenges in the local sand and timber supply chains.* The dependence on wood and sand during the construction phase requires more attention than previously estimated.
- *Fill information gaps regarding ecosystem services, for example on water availability and environmental impacts of sand and timber extraction.*

## REFERENCES

- Greenpeace, 2005. "Tolerância Zero: chega de madeira ilegal." Disponível em: <[http://www.greenpeace.org/brasil/Global/brasil/report/2007/6/greenpeacebr\\_060525\\_amazonia\\_relatorio\\_tolerancia\\_zero\\_port\\_v1.pdf](http://www.greenpeace.org/brasil/Global/brasil/report/2007/6/greenpeacebr_060525_amazonia_relatorio_tolerancia_zero_port_v1.pdf)>
- Instituto do Homem e Meio Ambiente da Amazônia (Imazon), 2013. "Boletim de monitoramento. Mês de referência, SAD junho/2013." Disponível em: <<http://www.imazongeo.org.br/relatorioBasicoVersaoImpressao.php?categoria=municipio&codCategoria=1506187>>
- Monteiro, A., Cardoso, D., Conrado, D., Veríssimo, A., & Souza Jr., C. 2012. "Boletim Transparência Manejo Florestal Estado do Pará (2010-2011)." Disponível em: <<http://www.imazon.org.br/publicacoes/transparencia-manejo-florestal/boletim-transparencia-manejo-florestal-estado-do-para-2010-a-2011>>
- International Finance Corporation (IFC). 2011. International Finance Corporation's Performance Standards on Social & Environmental Sustainability. Disponível em: <<http://www.ifc.org/sustainabilityframework>>
- Declaração do Capital Natural (DCN). 2012. Declaração do Capital Natural. Disponível em: <<http://www.naturalcapitaldeclaration.org/the-declaration>>

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